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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TAMAI, KARL I

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 08/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/083,927	Applicant(s) KALSI ET AL.	
	Examiner Tamai IE Karl	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 20-29 and 37-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 30-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims 20-29 and 37-41 drawn to an invention nonelected with traverse in Paper No. 02/11/2003 and 05/14/2003. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 30 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Beerman et al. (Beerman)(US 4,179,635). Beerman teaches a plurality of stator coils 7 positioned in channels on the thermally conductive, non-magnetic support structure 2.

4. Claims 1, 5, 30, and 33 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Boer et al. (Boer)(US 5,053,663). Boer teaches a plurality of stator coils 3 positioned in channels on the thermally conductive, laminated, non-magnetic support structure 2. The stator coil is positioned inside a magnetic core 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), in further view of Albright et al. (Albright)(US 4,330,726).

Boer teaches every aspect of the invention except ground plane assembly. Albright teaches a fiberglass tie to provide grounding protection (col. 6, lines 14-20). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the fiberglass tie of Albright to provide grounding protection.

7. Claims 3, 4, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), in further view of Denk (US 4,709,180). Boer teaches every aspect of the invention except axial cooling passages for the circulation of a cooling liquid. Denk a cooling liquid circulated through the axial cooling passages of the magnetic core 90. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the fluid cooling of Denk to remove heat from the stator.

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8. Claims 7, 8, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), in further view of Laskaris (US 4,385,248). Boer teaches every aspect of the invention except, the wedge material 2 being graphite based and the epoxy filler between the coil assembly and the coil support. Boer teaches the wedges are epoxy-graphite. Boer teaches the coils are epoxy impregnated, which would inherently include epoxy between the coils and the support. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the wedges being epoxy graphite because Boer teaches the composite material is a good choice for the wedge, and with the epoxy filler between the coils and the support to reduce losses between the winding and the support.

9. Claims 6 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Laskaris (US 4,385,248), in further view of Mariner et al. (Mariner)(US 5,863,467). Boer and Laskaris teach every aspect of the invention except, the epoxy being a polymer. Mariner teaches a polymer graphite material which has good thermal conductivity. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Laskaris with the epoxy being a polymer because Mariner teaches the polymer graphite material has good thermal conductivity.

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10. Claims 9, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), in further view of Cooper et al. (Cooper)(US 4,123,676). Boer teaches every aspect of the invention except, a superconducting rotor. Cooper teaches a refrigerated, superconducting rotor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the rotor of Cooper to provide a low loss field rotor.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Cooper et al. (Cooper)(US 4,123,676), in further view of Albright et al. (Albright)(US 4,330,726). Boer and Cooper teach every aspect of the invention except ground plane assembly. Albright teaches a fiberglass tie to provide grounding protection (col. 6, lines 14-20). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the fiberglass tie of Albright to provide grounding protection.

12. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Cooper et al. (Cooper)(US 4,123,676), in further view of Denk (US 4,709,180). Boer and Cooper teach every aspect of the invention except axial cooling passages for the circulation of a cooling liquid. Denk a cooling liquid circulated through the axial cooling passages of the magnetic core 90. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the fluid cooling of Denk to remove heat from the stator.

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13. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Cooper et al. (Cooper)(US 4,123,676), in further view of Laskaris (US 4,385,248). Boer and Cooper teach every aspect of the invention except, the wedge material 2 being graphite based and the epoxy filler between the coil assembly and the coil support. Boer teaches the wedges are epoxy-graphite. Boer teaches the coils are epoxy impregnated, which would inherently include epoxy between the coils and the support. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the wedges being epoxy graphite because Boer teaches the composite material is a good choice for the wedge, and with the epoxy filler between the coils and the support to reduce losses between the winding and the support.

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), Cooper et al. (Cooper)(US 4,123,676), and Laskaris (US 4,385,248), in further view of Mariner et al. (Mariner)(US 5,863,467). Boer, Cooper, and Laskaris teach every aspect of the invention except, the epoxy being a polymer. Mariner teaches a polymer graphite material which has good thermal conductivity. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer, Cooper, and Laskaris with the epoxy being a polymer because Mariner teaches the polymer graphite material has good thermal conductivity.

15. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Cooper et al. (Cooper)(US 4,123,676), in further view of Gamble et al. (Gamble) (US 5,777,420). Boer and Cooper teach every aspect of the invention except, the superconductive material being HTS material. Gamble teaches a HTS material for the rotor windings. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the HTS rotor windings because Gamble teaches that the material is preferred in superconductive rotors.

Response to Arguments

16. Applicant's arguments filed 5/14/2003 have been fully considered but they are not persuasive. The Applicant's argument that Beerman does not teach a thermally conductive stator is not persuasive. Beerman teaches the cylindrical hollow member 2 is made of non-magnetic steel (col. 1, line 39), which is inherently thermally conductive. The Applicant's arguments that Beerman does not teach a plurality of heat sink members is not persuasive because the stator has a plurality of cooling slots, each of which is a heat sink. The Applicant's argument that Boer does not teach a non-magnetic, thermally conductive material is not persuasive because Boer teaches the stator is non-magnetic sheet metal, which is inherently thermally conductive. The Applicant's argument regarding the preamble is not persuasive because the magnetic material is the outer shield 1, not the coils supporting teeth 2. The Applicant's arguments regarding claim 30 is not persuasive because Boer teaches an annular

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magnetic assembly 1 and non-magnetic sheet metal (inherently thermally conductive) 2.

The applicant's argument that the dependent claims are allowable because the independent claims are allowable is not persuasive because the independent claims are statutorily barred by Boer and Beerman.


Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist at (703) 308-0956.

Karl I Tamai
PRIMARY PATENT EXAMINER
August 1, 2003



KARL TAMAI
PRIMARY EXAMINER